THE

HORTICULTURIST.

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HOMES FOR OUR CITIZENS.

In our last number we pointed out to our readers certain attractive and desirable regions of the country, lying away from our cities, and yet accessible, which seem to us admirably adapted, in their various conditions, for summer resorts for the families of our cities who desire to withdraw from the sundry annoyances and inconveniencies of a town residence during the warm season.

There is a large class of prosperous merchants, bankers, professional men, and wealthy citizens who have the tastes and means to command such enjoyments and luxuries as the country affords; who need the change in scenes, associations, employments and objects of interest, for themselves and their households, and who enjoy, with a keen relish, the seclusion, the comparative freedom from restraint, the pure, sweet air, the broad, open sunshine, and the numerous other rural advantages which are essentially denied them in their city homes.

In former years this class of people re- d, almost exclusively, to the sea-side, o a few popular mineral springs, taking in, perhaps, Niagara in their transit, and rarely venturing into the wild and unexplored regions of Lake George. They returned to town in the early days of September, with many a backward, longing look at the attractions and delights from which they reluctantly tore themselves away, and settled down again to the weary tread-mill of business. But for some years past this class has largely increased in number, and instead of confining themselves to their former resorts, they now seek the upper country, and prolong their stay into the glorious days of Autumn. Many of them have provided permanent summer homes, among the hills and on the lake or river shores. They have bought, and built, and planted, until they have identified themselves with the chosen spot, and as their trees have taken root in the fertile soil, so have their affections taken root in the beautiful country. They hasten gladly to these rural scenes with the opening Summer, and they leave them with regret when the exigencies of business require their presence in the city,—when the Summer suns have ripened the luscious fruits, and the flowers fade with the frosty kisses of the cold, and the passenger birds fly Southward. This class of our population is provided for. Their ample means assure them

Entered according to Act of Congress, in the year 1864, by Geo E. & F. W. Woodward, in the Clerk's Office of the District Court of the United States, for the Southern District of New York.

a free choice of summer resorts, and adequate command of all the appliances of pleasant country living.

But there is another and still larger class of citizens who have neither the means to enable them to keep up both town and country residences, nor such command of their time that they can pass two or three months of every summer away from their business. There are thousands of clerks and subordinate officers in the banking and insurance institutions in our cities and in the large commercial houses; there are many merchants who are making their way slowly and surely to competence and wealth, who would gladly compromise for one-third of such a summer vacation. They are men of intelligence, and sometimes of a good deal of social and intellectual culture and refinement. Many of them were born, and their boyhood nurtured amongst the hills. They love the country with the intensity and purity of a first love, and they long for communion once more with nature in all her moods of loveliness. Their sweetest dreams still, when they forget the hard realities of life, are of green lawns and sloping hill-sides, of waving trees and cool streams. And they would wish that their children should become familiar with the same wholesome associations, and be moved by the same attachments and inspirations. In the city they are constantly exposed to its excitements, and subjected to the restraints of its artificial modes, with few outward influences to counteract upon their development; with very little, indeed, except the discipline and the affections of home to emancipate them from the tendencies to a trivial, artificial, and sordid life. They would gladly supply to them the healthful tone and vigor—the outer and inner bloom and freshness—which are the product of out-door life in the pure air of the country. But they are compelled by considerations of economy, to forego most of these advantages, and allow their children to grow up with city tastes and habits. They long for the country but think they must content themselves with the town, until the time comes when their fortunes will enable them to command the coveted indulgences.

The time may come, sooner than they anticipate, when they will be obliged to choose the country. As far as New York city is concerned, it is simply a question of time, and it will require no long process of solution.

During the last forty years this city has increased in population with a rapid and uniform rate. Within the memory of persons now living, it has grown from an inconsiderable commercial town, until it has become one of the great cities of the world. This rapid stride and steady progress furnish us with the elements for calculating the period when the whole island will be covered with buildings, and there will remain no more vacant space for the use of its commerce, or the domestic accommodation of its citizens. There are statistics at hand which will demonstrate this, which we take from the *N. Y. Evening Post.*

Exclusive of the parks and other public grounds, the city contains 141,171 lots; of these lots 58,016 are already occupied by some kind of buildings, leaving 83,155 vacant, so, in round numbers, we have built upon three-sevenths of our available territory, while four-sevenths,—a little more than one-half—remain for future occupancy. With the present pressing demands for dwellings and the present high rates of rent, these vacant lots cannot long remain unoccupied. During the last four years comparatively few buildings have been erected—while the great demand for dwelling houses shows that our population has continued to increase, notwithstanding the comparative suspension of building operations. The population has evidently outgrown the capacity of the city to contain it, and it is a certain and well-known fact that even the present population has pressing need of more dwelling-houses, and must have them.

The population of the city, when our last census was taken in 1860, was 814,254, and at the present time it cannot fall much short of one million. If the remaining vacant lots were occupied by buildings, and the density of the population remained the

same as at present, it would add about twelve hundred thousand persons to the city. The entire population would then be a little more than two millions.

The regular growth of the city furnishes us a simple method to ascertain how long it will probably be before we shall reach that number, and every available lot in our city be occupied. We will arrange the census returns in tabular form, so that the reader may see at a glance the ratio of increase.

1820,	123,706
1825,	166,089
1830,	202,589
1835,	270,068
1840,	312,852
1845,	371,233
1850,	515,394
1855,	629,810
1860,	814,254

An inspection of this table will show that the ratio of increase, during each period of five years is about twenty-eight per cent. But for the purpose of our present estimate, we will put this increase at twenty-five per cent., and we shall then have the following results:

1865,	1,017,817
1870,	1,272,271
1875,	1,590,338
1880,	1,987,922
1885,	2,484,902

It will thus be seen that the utmost limit of capacity will be reached before the year 1885, and that *within seventeen years there will not be a vacant lot upon the island*, and no structure can be erected without removing some existing building. New York will be a solid and compact city from the Battery to Westchester County.

If any of our readers are disposed to regard this as too short a period for such results, let them observe the progress of the last twenty or forty years. This city is not simply the commercial depot for the Empire State, but it is the distributing point for the commerce between the Old World and that immense country which is opening and growing upon this continent. It keeps even pace with the quick and vigorous step of the nation, and is becoming the great metropolis of a people who are spreading over a whole continent, and who hold the control of the great staples of commerce. For many years to come we shall have a large surplus of food, cotton, and gold. The world must have these articles, and must take them from New York. The natural and immutable laws of trade will make our city take dimensions which have no limit but the commerce which has made and sustained it. Estimate the capacity of this continent to furnish gold, bread-stuffs, and raw material for manufacture for foreign nations, and then we shall be able to comprehend the far off and magnificent future of New York.

During the present century the growth and changes of population have shown that, by reason of the industrial and commercial pursuits carried on in the cities, the population increases in them more rapidly than in the country. In France, for illustration, from 1851 to 1856 there was a decrease in the number of those occupied in agriculture, of 2,928,803, and an increase of those employed in other industrial and commercial pursuits, of 3,518,476. In England, also, the cities have increased in population in a greater ratio than the country at large,—the cities doubling in thirty years, and the rest of England increasing but forty per cent.

In this country the rapid increase is more marked than in Europe. The fifty cities which have now a population of twenty thousand, and over, have increased from 1820 to 1860, more than seven fold, while the rest of the country has increased but three fold. Or if we make the comparison between the nine cities which have over 100,000 inhabitants, we shall find that the increase has been quite as marked. Their population in 1820, was 379,332,—in 1860, 2,521,833,—an increase of 2,142,501, while the increase of the whole population of the United States, during the same time, was 21,790,484. This tendency to concentration strengthens the expectation that this city will sustain its

present rate of growth, and gain its second million in as rapid a ratio as its first.

There is another consideration that justifies this expectation, and that is the general principle that population concentrates after periods of public disturbance. This was especially true of the continental cities after the wars of Napoleon. Paris, Vienna, Berlin, Munich, Frankfort are notable examples. An old and new city is distinctly marked in each,—the new running over the boundaries of the old, and filled with elegant and expensive buildings. London, which increased in the whole of the eighteenth century only about 250,000 has added to its population since 1821, about 1,625,000, and this foreshadows the future growth of our own city. We stand now about where London did after Waterloo. The concentration of population, in our case, is aided by the increase of capital and business, and the development of the inexhaustible agricultural and mineral resources of our land. No city ever yet occupied so strong a position as New York. Equally accessible from all the maritime points of Europe; midway upon a coast stretching North and South, and receiving by easy water transit the productions of all climates from the tropics to the poles; and with a back country stretching westward across the continent, unequalled in resources, productiveness, and the energy of its population, and all finding here their market and metropolis, New York must remain the commercial, financial, and intellectual heart of the continent.

There are other considerations which will have an important bearing upon the future of our city to which we can barely allude. They are results yet to be attained, with few exceptions, but all of them we believe, within certain reach of the energies of our people. Among them we enumerate the Atlantic Telegraph—the one across the continent and through Siberia—the railway to the Pacific, and the new route to India and China—the development of river navigation, and manufacturing—the restoration of the Union, and of the productive industry of the South, and the new lines of steamers which will supersede our old sailing vessels. These will affect New York as a metropolis, for she is to be regarded not only as a city by herself, but as having immense suburbs, as Brooklyn, Jersey City and Newark, which now contain not far from one half million inhabitants, not to mention Westchester County, Staten Island, the adjacent portions of Long Island, and the shores of the Hudson to the Highlands. The city has already overflowed into these dependencies, and the current will continue to run on with increasing force and fullness.

Meanwhile, the expenses of living in the city are increasing every year. Rents are higher now than ever before, and there is no prospect of their coming down for many years. For it must be remembered that when we begin our building operations again, we shall have to provide not only for the current increase in population, but for the deficiencies which result from the past four years or more, when comparatively few dwelling houses were erected. At the present time the rent of a convenient and respectable house, suitable to the requirements of a family having a fair income, and occupying a desirable position in society, is an excessive item of cost.

And the remedy for this is to go into the country. Along the lines of our railroads and navigable waters there are localities where land is comparatively cheap,—beautiful, healthy regions, where the comforts of a rural home may be secured, with all the advantages of society, and of religious and educational establishments and institutions. The facilities for reaching these country homes are already adequate for general purposes, and will be increased every year, as the demand for them grows. Railroads and steamboats are built and run for the purpose of profit on freight and passenger transportation. According to the general law of trade, the supply will equal the demand, and as the population increases along our lines of travel, the facilities and

accommodations for transit will be multiplied.

Why, then, should the man who loves the country, and possesses tastes and capacities for its enjoyment, and yet is compelled by circumstances to practice economy in his mode of living, be restrained to the city limits? It is quite a practicable thing for him to realize his wishes,—live in the country and enjoy its best luxuries, without abandoning the city as far as its commercial advantages are concerned. There are localities *within an hour* of the city hall, where land can be purchased at reasonable rates, and where all the advantages of health and beauty, of retirement, pure air and attractive scenery can be enjoyed for less money than he now expends in the narrow house in the crowded street, where every sense is offended—with no open sky or distant horizon tinged with the glories of the dying day or rising morn—no grassy lawns, or waving trees, or fragrant banks of flowers.

For such accommodations as he has, he pays, we will say, a rent of one thousand or twelve hundred dollars. In the country he might purchase two acres of land and build a cottage, which would afford him all, or more, conveniences than he now has, without the necessity of climbing up four or five flights of stairs—at an outlay, at the usual cost of building, not exceeding six thousand dollars. The interest on this sum would be four hundred and twenty dollars. The difference between this amount and his present house rent would in a few years pay the whole cost of the place, and he would have a *home*—a centre and gathering place for his domestic interests and affections.

And this is no fancy sketch—no exaggerated statement of possibilities. We know of localities which can be reached from Wall Street in as many minutes as would be required to go to 50th Street, where land can be obtained for about five hundred dollars an acre, where there are all the conditions of health, good water, pure air, extensive and attractive views, and whatever else is desirable for a country home. In the direction we have now specially in mind, there are at least twenty railroad trains which daily stop at a convenient station, between the early morning and ten o'clock at night. For the ordinary purposes of business, and social intercourse, this is ample travelling accommodation.

We have already exceeded our usual limits, and we must close, but not before we add that for that class of our citizens whom we have had in view in writing this article, it will soon cease to be a matter of choice whether they live in the town or country. High rents in the city will send them into the country, whether they will or not.

[WRITTEN FOR THE HORTICULTURIST.]

THE GLADIOLUS.

BY EDWARD S. RAND, JR., BOSTON.

During the past season of burning heat and excessive drought which have dried up our perennials, parched or killed our annuals, and sadly diminished the bloom of our summer bulbs, no plant has held its own better than the subject of the present article. This new incentive to its culture was little needed to add to the merits of a plant, which during the last ten years has been steadily growing in public favor. It would be most difficult to name a plant which is its superior in brilliant effect, delicacy and variety of color, and ease of culture. We can venture to predict that a very few years will find it indispensable to every garden, and superseding every other bedding plant for brilliant effect in masses. The above remarks apply only to our garden Gladioli, which are all hybrids from G. Natalensis and G. floribundus, with a little of the blood of cardinalis and ramosus in some fine varieties; they are commonly

known in gardener's parlance as "Gandavensis hybrids" from the first hybrid raised, and differ much in habit and form from the more delicate and yet hardy European species, and the graceful and slender growing species of Southern Africa. Interesting as an article on these species might be, beautiful and almost unknown as many of them are, at present we can only say that they are mostly unsuitable for garden culture in our Northern States, requiring a greenhouse and much care to flower them in perfection. A descriptive list and colored figures of most of the finest may be found in Mrs. Loudon's Bulbous Plants. The name Gladiolus, from the Latin, is a true diminutive from "*gladius*," "a sword," and therefore means a little sword: its reference is to the shape of the leaves of the plant, and the same is found in the common name, "sword lily." The name is generally incorrectly pronounced "Gladiólus," with the accent on the "o"; following the analogy of the Latin, the word should be "Gladíolus," the accent on the "i," leaving the penult short; a far more euphonious word.

Gladiolus floribundus, or oppositiflorus, is a native of the Cape of Good Hope, and was introduced to English gardens about the year 1788. It is a well known species of easiest culture, and will, even in New England, sometimes survive the winter in the open ground. The best mode is to take up the bulbs, which are small, soon after the frost has killed the leaves, and preserve them in a cool dry cellar free from frost, until spring. The flowers are produced abundantly on opposite sides of the stem (whence the names) and are of a whitish pink with purple or lake markings.

Gladiolus Natalensis or psittacinus was introduced in 1829. It is a plant of sturdy habit, flowers scarlet and yellow, mottled; too well known to need particular description. Although a native of the hot region of Port Natal, it is often found hardy—and in England and some sections of our country is perfectly so; the bulb only requirjng to be surrounded by sand to prevent its rotting in the winter.

While G. floribundus is still commonly cultivated, G. Natalensis, having been long since surpassed in habits and color by hundreds of hybrids, is entirely neglected, and is rarely met with; and few indeed would imagine that the introduction of this now despised species threw the whole horticultural world into a fever of excitement, and that the bulbs commanded immense prices.

These being the original species the first hybrid was G. Gandavensis, so called from the town of Ghent. Its origin is obscure, the late Hon. and Rev. Wm. Herbert, the best authority on bulbs, declaring it impossible it should be a hybrid between the two species mentioned above, as with all his skill in hybridising he had never been able to cross those two species.

Be this as it may, certain it is that to G. Gandavensis we owe all our fine hybrids; this variety crossing freely with all other varieties, and some of the species; the seedlings sporting very much.

The color of the flowers of the variety is scarlet red, with deep or light yellow blotches on inferior petals; it is a showy plant, and although excelled by hundreds of seedlings is worthy of cultivation.

GENERAL TREATMENT.

The bulbs should be planted as soon as the ground is fairly dried in the spring, and all danger of frost is over. If deeply planted a surface frost does no injury. Plantings may be made every two weeks until the middle of June for a succession of bloom. Set the bulb from two to four inches deep according to the size (we have found deep planting advantageous in dry seasons) and cover lightly with pulverised soil free from stones, pressing it gently down with the palm of the hand. The plants will appear in about ten days, and only require to be kept free from weeds; a light hoeing occasionally is beneficial for keeping the ground open, and allowing air and moisture to penetrate. Do not water unless in very

severe drouth when the plants are dying; (except in the case of small bulbs which are often lost by drying up,) watering tends to bring both new bulbs and roots to the surface and is injurious.

When the plants are about four inches high they should each be tied to a neat, light stake, which should be of such a height as to allow the whole bloom of the spike to project above it; 2 feet 6 inches is a good length. As the plant grows and the flower-spike pushes, new ties should be given, as much danger is to be apprehended from violent winds or heavy rains. If we do not desire to save seed we should cut off the flower-stalk as soon as the bloom is past. When the frost has killed the leaves or before, if the leaves by turning yellow show the ripening of the bulb, the bulb should be taken up, dried *rapidly* in full sunlight, the new bulbs separated from the old, and the flowering bulbs (the stalk being cut off about one inch from the crown of the bulb) and the bulblets, (which on some varieties are plentifully produced,) put up in paper bags carefully labelled. During the winter the bulbs should be preserved in a dry cool cellar free from frost.

SOIL.

A rich light soil is best adapted to the plant. Our practice has been to dig into the beds late in the autumn a quantity of well rotted (at least two years) manure; cow manure is preferable to any other; then, in the spring just before planting, dig the bed again and pulverize the soil well. In a deep clayey loam with clay subsoil the plants seldom produce fine flowers; a gravel subsoil seems to suit the plant. Our finest beds are where was formerly a pitchpine wood.

SEED.

Most of the hybrids ripen seed freely, but no dependence can be placed upon its producing the parent, indeed for it to do so is the exception, and not the rule. As soon as the seed is ripe, which is known by the bursting of the capsule, it should be gathered, and may at once be sown in a frame or green house, or carefully dried and preserved until the spring. The seed retains its germinating property about a year.

SEEDLINGS.

Almost every seed will produce a plant. If sown as soon as ripe, say in September, the plants soon appear, looking like small blades of grass; they should be rapidly grown in heat; about the first of March they will die down; rest should be given them by witholding water until about the first of June. The little bulblets which will be about the size of peas, should then be replanted in boxes about three quarters of an inch apart; water moderately; they will grow all summer, dying down about October, give a rest until January, then repot, an inch apart and grow until March; rest again until June, plant in beds of finely pulverized soil in the open air, and the larger proportion will bloom in September.

This rapid growth can only be attained where there are green house facilities. Ordinarily the seed is sown in a box or pot, set in a frame in the spring, the plants die down in the autumn, are wintered in the box in the cellar; the next spring are planted in a prepared bed and following the same process, bloom the third year.

PRESERVATION OF VARIETIES.

As a bulb worth five dollars, cannot in the dry state be distinguished from one worth five cents, great care must be taken to preserve varieties true to the name. For this the use of wooden labels with the name written in black lead, is to be discouraged, as aside from the danger of misplacing, the name is often rendered illegible by the weather. We have as yet seen no better way than our own, by which we have preserved some hundreds of distinct varieties without a mistake. The names are written with chemical ink on both sides of a zinc label; (such as are ordinarily sold for fruit trees,) these are attached to chestnut stakes two and a half feet long, pointed at

the lower end, and bored at the upper, by a *zinc* wire (iron rusts, lead is too pliable, copper eats the zinc.)

In planting we set the stake with the name attached when we plant the bulb; as the plant grows it is tied to the stake, and in autumn, stake and bulb come up together. When the bulb is dry enough to bag, the name from the stake is first written on the bag, then the bulb is cut off, cleaned and bagged; the stalk thrown away and the stake put away for the next year. All this takes time, and is troublesome, but the satisfaction of knowing that all varieties are true to the name, more than compensates. If this mode were followed by growers there would be no such general complaint as now exists, of poor kinds being imposed for good varieties. Our experience is that in this respect the most culpable carelessness prevails which yearly grows worse as varieties increase.

PROPAGATON BY BULBLETS.

We have said that seeds seldom produce the parent; how then can we multiply any variety in quantity? by bulblets. When we take up the bulb in the autumn, we see at the base of the root more or less numerous, bunches of black or white hard bulbs, varying in size from a marble to a mustard seed. These, if we can get them to grow, produce the original variety. Collect these carefully, bag and label them and lay them aside for eighteen months, then sow them in the open border in a prepared bed; they will come up in ten days, not one will fail, and form bulbs which will bloom the next summer. If, however, you plant them the next spring after gathering (instead of keeping them over a season,) not one in a hundred will come up.

DISEASES AND ENEMIES.

A cold damp soil causing rot is the greatest difficulty in Gladiolus culture; this may be in a degree remedied by planting the bulb in sand. Rust is a disease of which the cause is yet unexplained; the whole plant turns a dirty spotted yellow, and the bulb is found to be eaten with white spots. As soon as the disease is observed dig up the bulb and throw it away; it seems more prevalent in damp soils, appearing just as the plant shows bloom. A green cut worm often eats off the tender shoots in early spring; the only remedy is to examine the base of each shoot at night and kill the worm. The skin covering the bulb is sometimes infested with mealy bug —immediately burn every bulb so infested, let the variety be choice as it may.

MULTIPLICATION OF VARIETIES.

This is an evil which will soon be felt; all the world are raising seedling gladioli. At least one half of the seedlings, are equal to or better than old named varieties. Each grower names his favorites, and we are in danger of having a confusion of synonyms which will rival the palmiest days of pear culture. How this can be remedied other than by a Gladiolus convention is an interesting question.

We have said our native seedlings are better than named varieties; we have reason to rejoice it is so, and we see no reason for importing Gladioli when we can raise far better varieties than we can import.

VARIETIES.

The following are some of the finest varieties:

El Dorado, Solfaterre, Lord Campbell Vulcain, Pluton, La Quintanie, Rembrandt, Madam de Vatry, Goliah, Junon, Vesta, Sulphureus, Hebe, Goliah, Penelope, Calypso, Madam Binder, Mille Souchet, Mrs. Vilmorin, La Poussin, Count de Morny, Achille, Brenchleyensis Anatole Levanneur, Imperatrice, Ceres, Princess Clothilde, Osiris, Dr. Lindley, Napoleon III, Mars.

The following varieties are very poor and not worth growing except for massing:

Mon' Georgeon, Chas. Rouillard, Madam Pele, Mad' Paillet, Keteleerii, Mrs. Couder, Gil Blas, Roseus, Isabella, Burgraff d' Osterland, Mon' Blouet, Robert Blum, Charles Michel, Dr. Margolin.

These lists might be infinitely increased,

and the day is not far distant when a large proportion of imported named varieties will be thrown out of cultivation by American seedlings.

Glen Ridge, Oct. 1864.

RURAL CHURCH.

DESIGNED BY THE REV. DR. CRESSY.

THE plan for a RURAL CHURCH which we present to our readers this month, was designed by the Rev. Dr. Cressy, assistant minister of the Church of the Annunciation in this city. It is intended for a church which is to occupy a beautiful and commanding site on the western shore of Lake George, in the midst of the original forest. It will also meet the requirements of several correspondents who have requested plans for rural churches which could be erected as economically and cheaply as possible, with due regard to proportion, fitness and beauty of expression.

Fig. 1.—*Perspective.*

This design will be found to comprehend, we may say, in an eminent degree, variety of outline, correctness of detail, force of expression and purity of taste, with simplicity of execution, and in those parts of the country where lumber is abundant, and labor not exorbitant, it can be erected at a low cost.

We have a right to congratulate ourselves on the improvement which the last quarter of a century has witnessed among our people in the building and adorning of our edifices devoted to Christian worship. Downing, in his time, said, "that the ugliest church architecture in Christendom, is at this moment to be found in the country towns and villages of the United States." And speaking of the influence of what our churches should be, in the beauty of their proportions, and in the expression of the sacred purposes which they embody, and the feelings of reverence and harmony with God and man which they suggest, he fitly says—"We fear there are very few country churches in our land that exert this kind of spell,—a spell which grows out of making stone, and brick, and timber, obey the will of the living soul, and express a religious sentiment. Most persons, most committees,

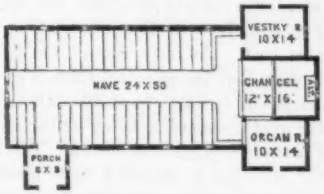

Fig. 2.—*Floor Plan.*

select men, vestrymen, and congregations, who have to do with the building of churches, appear indeed wholly to ignore the fact, that the form and feature of a building may be made to express religious, civil, domestic, or a dozen other feelings, as distinctly as the form and features of the human face:—and yet this is a fact as well known by all true architects, as that joy and sorrow, pleasure and pain, are capable of irradiating or darkening the countenance. Yes, and we do not say too much, when we add, that right expression in a building for religious purposes, has as much to do with awakening devotional feelings, and begetting an

attachment in the heart, as the unmistakable signs of virtue and benevolence in our fellow-creatures have in awakening kindred feelings in our own breasts.

"We do not, of course, mean to say that a beautiful rural church will make all the population about it devotional, any more than that sunshine will banish gloom; but it is one of the influences that prepare the way for religious feeling, and which we are as unwise to neglect, as we should be to abjure the world and bury ourselves, like the ancient troglodytes, in caves and caverns."

Happily we are coming to appreciate these truths, not only in our cities, but in the country, and the ugly, unsightly, and unseemly structures which have so long deformed the land are giving place to edifices in which the true ideas of harmony, grace, proportion, symmetry and expression, which make what we call Beauty, are brought out in due proportion.

The church we present is designed to be of wood, the country about the site affording an abundance of that material, at the lowest cost. An inspection of the design will show that the principal timbers of the frame are intended to be visible externally, —the weather-boarding being set back from the face of the posts and beams. This exterior covering is intended to be made of sound *rough* plank, from ten to fourteen inches wide, and at least one and a-half inches thick. These are to be tongued and grooved, so as to make a close joint, and nailed to the frame in a *vertical* manner. The joint is to be covered with a narrow strip, or batten, of one and a-half inch plank. These unplaned plank may be painted with two good coats and sanded, or they may be left to take such tints and complexion as time and the weather may give them.

Lumber, at the proposed site, being cheaper and more easily obtained than lime, the interior of the church will be neatly ceiled with narrow boards, which will be lightly stained and oiled. The roof will be "open timber" of simple construction. All the wood work of the interior will be of pine, smoothly planed, stained and oiled, without paint, except the ceiling of the roof which should be colored, in order to give something like warmth of tone to the interior, the lack of which is often sadly felt in our country churches, particularly.

This mode of weather-boarding and "open timber" finish is now so common that a more particular description is unnecessary.

This church will seat, comfortably, about two hundred persons. Its cost will depend entirely upon the price of lumber and labor, of course, and these vary with different localities, and are particularly uncertain at this time. We will only add that it will cost no more to build with correct proportions and in good taste, than in disregard and defiance of these desirable and commendable principles.

THE IMPROVEMENT OF FLOWERS.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

The question is often asked, whence came the brilliant flowers of our gardens? They are not found in nature. Our roses, hollyhocks, pansies, dahlias, carnations are, in their natural types, though abundantly interesting, far inferior to the garden varieties both in form and color. The art of producing new varieties forms perhaps the most interesting department of flower culture, and, for the profit, not of the expert but of the novice, we shall devote a few pages to it.

This art, like the improvement of the breeds of cattle or horses, is, for the most part, in complete concurrence with Nature and in furtherance of her design. Its processes may be called artificial, but the greater part are no more artificial than those which in the course of generations elevate the wild man to the man of civilization.

It must be admitted, however, that in one essential particular, Nature and the florist do not act in concurrence. We allude to the production of double flowers. In these, the stamens and pistils, the organs of reproduction, are changed wholly or partially into petals, or flower leaves, and when the change is complete, the flower becomes barren. A half-double flower, however, will often bear seed as well as a single one.

The processes of improvement may be divided into—First, Culture and Selection; Secondly, Hybridization. Give the plant, in the first place, the benefit of the circumstances of soil, exposure and general management most favorable to the development of its flowers. Watch them as they open, and remove every flower which falls short of the highest perfection of form and color of which the plant is capable. This should be done at once in order that the pollen of the imperfect flowers may not fertilize the rest, and for the same reason it is better that the plant itself should stand at a safe distance from other plants of the same kind. Where the bloom promises to be abundant, there is great advantage in removing some of the flower-buds as soon as they form; indeed nine-tenths of them may often be removed, thus causing the whole strength of the plant to centre on those that remain. By these means, we obtain a small quantity of seed, from the most perfect flowers and of the most healthy and vigorous quality. Sow it and raise plants from it. The chances are that some of the young plants will produce flowers superior in some point or other to those of the parent. Select one or more of the best and repeat the former process, raising seed from them with similar care and similar precautions. Hence another step in improvement; and so on until the plant has reached the limit of its possibilities. By these means, sometimes with and sometimes without the aid of hybridization, the pansies, phloxes, and other ornaments of our gardens have been developed in the course of years from their humble prototypes of the fields and woods.

As in races of men, so in plants, there are great differences in the capacity of development. Some improve rapidly, others slowly, others not at all. Some quickly reach their highest development, and refuse to be improved farther. Others display extraordinary caprices, "sporting" into new forms and colors and offering a fascinating field to the labors of the florist. Many most pleasing results have been produced by the patient and watchful development of these "sports." By some caprice of nature, a flower appears with a coloring distinct from others of its kind, and the florist seizes upon it as the basis of his operations, raising seed with a view to the development and improvement of this peculiarity, in other words, breeding for the point, as is done by breeders of Guernsey cattle. Sometimes the attempt fails, the offspring of the "sport" obstinately returning to the original and normal color; but usually there is more or less tendency in the sport to reproduce itself. Out of a hundred seedlings, one or two may display the peculiarity of the parent; or perhaps half may do so, or perhaps nearly all. Again, the florist choses those in which the desired coloring appears most distinct and attractive, protects or removes them from the bastardizing influence of other flowers, gathers their seed, and raises a new crop. Here the chances are that the desired feature will again appear in greater number and better development.

It usually happens that, with every repetition of the process, the tendency in the sport to reproduce itself increases, so that with each sowing a large number of the seedlings show the peculiar stamp of their parentage. Sometimes, the distinctive character becomes completely "fixed;" in other words, all the seed will come true, not one of the seedlings reverting to the original type, and our floral riches will thus be increased by the addition of a permanent variety. The art of improving flowers from seed is one where chance shares equally with skill; and while a patient zeal in the

long run is sure of its reward, the hazards of the game maintain a pleasing interest throughout.

We have spoken of double flowers. The law which regulates their production—so far as any law can be distinguished,—is not always the same with that which applies when a perfect single flower is the object aimed at. By some freak of nature, a flower shows a tendency to double itself, that is to increase the number of its petals at the expense of its stamens. Our object is to encourage this tendency. To that end, far from increasing the natural vigor of the plant, we diminish it, cramming the roots into a small pot where they subsist on half rations. The seed saved under these circumstances from the partially double flower has usually a greater tendency to produce double flowers than that saved when the plant is in full vigor.

The exceeding diversity in the habits, tendencies, and caprices of flowers in respect to their functions of reproduction, the curious and sometimes very beautiful results proceeding from some unexpected freak of nature, and the possible advantages to be gained by dexterously turning this freak to account, while they open a wide field to observation and experience, give these floral pursuits an attractiveness which commonly engages for life those who have once been enamoured of them. Amateurs have succeeded in them quite as well as professed cultivators. The needful requisites are zeal, patience, and a little leisure. He or she who can command a half hour each day need not despair of excellent results and will be certain of pleasure in pursuit of them. A routine of superficial culture is the bane of our suburban gardens. One who devotes his attention to a few favorite flowers, aims to do them full justice, makes himself acquainted with their habits and character and requirements, and if they are of sorts adapted to such experiments, seeks to develop and perfect them by the means briefly indicated above,—one in short who aims thoroughly to master one or more specialties of culture, will receive more pleasure and learn more horticulture than by superficially trifling with the whole field. There is no species of plant a thorough knowledge of whose culture does not involve principles applicable to vast numbers of plants. Well directed reading, with a special object in view, is of the greatest practical value. No practical cultivator of high standing will deny its advantages.

In another paper we shall have something to say of the processes of Hybridization.

LICHENS AND MOSSES.

The Lichens constitute an extensive tribe of plants, exceedingly curious and beautiful in the simplicity of their structure, and very widely diffused. They consist chiefly of dry, hard, scaly crusts, without even the semblance of leaves or stems, except in a few species in which there are parts to which these names might perhaps be given.

The Lichens occupy almost the lowest position in the scale of vegetation. Their structure consists in a horizontal expansion which is termed a frond or thallus: a shield, or cap-like receptacle in which the sporules or seeds are contained; a sort of fruit stalk, which is however only an extension of the thallus, and in some instances a sort of fringe of minute fibres, forming a kind of root. The fructification of the lichen is usually dispersed over the surface, in some cases apparently imbedded in its substance, and in others slightly elevated, and assuming the appearance of a bunch of diminutive brown or scarlet berries.

Doubtless the greater part of this tribe derive their nourishment entirely from the atmosphere, and the moisture it contains, for although some of them exhibit a number of hair-like filaments by which they fix themselves to the place on which they grow,

and which may possibly aid in the absorption of moisture, the circumstance of their flourishing on the most sterile rocks where there is not a particle of soil, is a proof that it is from atmospheric influences they are nourished and come to maturity.

Linnæus fancifully gave the name of *Vernaculi*—bond-slaves—to the sea-weeds, but the lichens much better deserve it, for they seem as it were chained to the soil, which they improve for the benefit of other races of plants.

The mode in which these insignificant plants prepare the surface of sterile rocks for the reception and growth of higher species of vegetation is very remarkable. While the lichen is living, it forms a considerable quantity of oxalic acid, the materials for which—oxygen and carbon—are supplied by the atmosphere. This acts chemically upon the rock, especially the limestone, and forms hollows in which the detritus, both of the rock and of the decaying plant, remain. The moisture which is caught in these little wells sinks into the crevices of the rock, and when the frost comes and seizes on these particles of moisture, it causes them to expand, and thus breaks up the surface beneath which they lie into minute fragments, so continually adding to the forming soil. Age after age this process goes on, until at length the barren rock or the volcanic lava is found clothed with soil and converted into fruitful fields. The mosses follow the lichens, and then come the ferns and other tribes, and each one by its decay affording a richer and more plentiful soil to those that succeed.

There are many species of the lichen, and many of them vary greatly from each other. Some of them creep upon the surface of the earth, and spread over whole plains in the desolate northern regions. Others spring from the branches of the trees, and hang down from them like grey and matted beards. Some overrun old walls, and rocks, to which they give those soft and agreeable tints which render ancient ruins so pleasant to the eye. And others, again, establish themselves upon the bark of living trees, and intertwining there, they form curious lines and figures which resemble the strange characters of some Oriental inscription.

The moss tribe is somewhat higher than the lichen in the scale of vegetation and more useful in the economy of things. But even the lichens are not without value, for many purposes, as we shall see by observing two or three species.

On the wood of some old gate or paling, you will see a dry, mealy crust of a bright yellow hue. This is the *candle-dying* lichen, so called by the Swedes, who use it to dye the candles which they use in their religious ceremonies. There is another of the lichens which is employed for a similar purpose. It is called, in the Scottish Highlands, the *Cudbear*. It grows there abundantly, and is used for dying woolen yarn of a purple color, for which purpose it is collected by the peasants and sold. It is a greyish substance and grows on rocks, from which it is scraped by the collectors with an iron hoop.

The *Clustered* lichen presents a bunch of dry, strap-shaped fronds of a grey and hoary appearance, and on close examination it will be seen that at a little distance from the point of each frond there will be one or two beautiful silver-like blossoms, so to call them, all clustered over with a delicate white powder.

There are many other kinds which will reward a careful examination, some yellow, others white, brown, grey, green, all clustering on the cold stone, or dry wood, and imparting to them a richness of coloring which would otherwise be wholly wanting.

There is a species called *Rock Tripe*, from some resemblance it bears to that article of diet, which supplies the Canadian hunter with food when none better is to be procured, and it is said to have been almost the only sustenance of the enterprising explorers, Richardson and Back, when they were out with Sir John Franklin in the Arctic regions. This species bears some resemblance to the *Iceland Moss*, which is a well-known lichen, from which an excellent and nutritious jelly is made.

This last named, as well as the *Stag Horn* and other lichens are abundantly eaten by rein-deer. The true *Rein-deer* moss is, however, one of the most important of this tribe of plants, as well as exceedingly beautiful in appearance. It is branched and hoary and grows several inches in height from the ground, the surface of which it often overruns for many miles in extent, and furnishes the chief part of the food of the rein-deer. Linnæus says there is no vegetable that grows so abundantly as this, "especially in woods of scattered pine where, for very many miles together, the surface of the sterile soil is covered with it as with snow. On the destruction of the forests by fire, when no other plant will find nourishment, this lichen springs up and flourishes, and after a few years attains its greatest size. Here the rein-deer are pastured, and whatever may be the depth of snow during the long Winter in that climate, they have the power of penetrating it, and obtaining their necessary food."

There is one other beautiful species of this plant which we will notice. It is the common grey *cup-moss*, called by Gerard by the pretty name of the *Chalice-moss*. A little cluster of glaucous leaves first appears, from which spring ascending shoots, branched towards the top, the apex of each branch swelling into a little cup-shaped vessel, which might contain a drop or two of water. From the margin of these little receptacles, in the course of time, spring others like them, so that you have eventually a cluster of little cups raised on stalks, and growing on the edge of the original cup. When in fruit the seeds, which are scarlet, and formed on the edge of the cups, look like clusters of tiny bits of coral set in silver.

From what we have said it is evident that the study of even the lowest orders and species of the vegetable kingdom is full of interest and inspiration to the thoughtful, while the devout will not fail to find, in every investigation of His works, from the minutest to the most exalted and sublime, new and impressive evidences of the skill and wisdom of Him

> "Who planned and reared, and still upholds a world
> So clothed in beauty."

THE BROAD-LEAVED EVERGREENS.

BY AN OLD CONTRIBUTOR.

MESSRS. EDITORS: Few pages of the HORTICULTURIST interest your amateur readers more than those devoted to the introduction of Rhododendrons, Kalmias, Hollies, and Mahonias. When we read of these plants as the favorite adornment of English homesteads, and when we see many of them growing wild in our own country, in splendid luxuriance, one cannot but ask himself why they may not be introduced into our own gardens and pleasure grounds. That the attempt has been made, and with only partial success, many of your readers well know.

The history of such endeavors, in Central New York, has been about as follows:—Plants of American Holly and Kalmia Latifolia and Rhododendron Catawbiense have been bought, at different times, from the Eastern nurseries, and set out in ground prepared as directed in the books, viz.: One-third muck, one-third sand, one-third common soil; the whole trenched and worked together, eighteen inches or two feet deep. The beds have been partially shaded on the south side by tall screens of arbor vitæ. In the winter, evergreen boughs have been stuck in around the plants, to protect them from severe winds and sudden changes of temperature. During the first year these plants have done well, the Kalmias and Rhododendrons making a moderate show of blossoms. But in the second year, they have mostly drooped and failed to flower; in the third year, they have drooped still more; and thence after, if they have managed to live, it has been only to show that something was wrong in their condition, and to dishearten and mortify the owner. The Holly has done no better. Azaleas of

several sorts do pretty well; the Prinos glaber holds its own; and Mahonia aquifolia does best of all. The Rhododendron maximum has also been tried, and with much better success than Rhododendron Catawbiense. The leaves and flower-buds go through the winter quite bravely, and endure the heats of mid-summer very well. Did this species only furnish us as great a variety and beauty of blossoms as the Catawbiense, we should be content.

It is perhaps not known to all of your readers, that the Rhododendron maximum is indigenous in this part of the State. Dr. Gray speaks of it as found in "damp, deep woods, sparingly, in New England, New York, and Ohio, but very common along shaded water-courses in the mountains of Pennsylvania and southward." The Catawbiense, he says, belongs "on the summits of the Alleghanies, Virginia, and southward." It is not, therefore, surprising that the first should prove a little the hardier of the two.

One of the few native habitats of the Rhododendron maximum, in this State, lies about four miles north of this town. The land, for some distance around it, is low, swampy, and comparatively barren. The forests are composed of scarlet maple, birch, black ash, elm and hemlock. Entering the wood from the north side, and stumbling over fallen trees, and winding through dense thickets, you come to an open area, eighty or one hundred feet in diameter, in the centre of which is a mass of Rhododendrons. There appears to be a central group of several plants, which throw up some of their shoots ten or fifteen feet high, and spread out others over the ground about the same distance. Around this central mass, young plants have sprung up, both layers and seedlings. This group stands on a sort of hummuck, or low mound of peaty earth, partly surrounded by water. On the south side, it is open to the sun, or but slightly shaded by an ash tree. To a lover of this family of plants, the sight is truly splendid. It is a great towering mass of broad, glossy, luxuriant leaves, enlivened by hundreds of plump flower-buds, nearly as large as butternuts.

This thriving grove of native Rhododendrons shows us two or three things, viz.:—that the Rhododendron maximum is perfectly hardy in the climate of central New York; that its favorite soil is a moist muck or peat; and that while it does not suffer from exposure to the sun's rays on the south, it likes to be protected from the winds by a girdle of foliage on the north and west sides. So, doubtless, whoever will supply these conditions artificially, can grow this plant in the same latitude to his perfect satisfaction.

But what can we do with Rhododendron Catawbiense? It gladdens our eyes on visiting your Central Park in June, to see its masses of these plants and of Kalmias, in such vigor of growth and splendor of bloom. Surely, *you* can grow them well. Mr. Sargent, also, at Fishkill, succeeds with them; as do the amateurs around Boston. What is the cause of our ill-success? Are we a little too far north? Does our soil contain some hurtful ingredient? Don't we trench our borders deep enough? Perhaps the trees with which we encircle our beds send their roots among the Rhododendrons and rob them of their food and drink. We, however, strive to guard against this, by cutting off those roots every Spring. It seems plain that this family of plants needs a good degree of moisture at the roots, and that permanently.

Mr. Editor, there is no question, not even that of the grape, in which gardeners and planters feel a deeper interest than this.

If you can teach us how to grow successfully these finer sorts of the broad-leaved evergreens, you will do us a most excellent service, and we will build you a monument.

It is a matter of rejoicing that the horticulturists around Boston have taken up this matter in earnest. Mr. Hunnewell's premium to encourage the introduction of these and kindred plants, speaks well for his intelligence and liberality. Cannot something as good be done in this State? G.

Clinton, New York, Sept. 1864.

THE SHELDON PEAR.

A FRUIT of first quality, succeeding best on the pear stock. Tree, hardy and a good bearer. An American seedling raised by Mr. Sheldon, of Penfield, Wayne County,

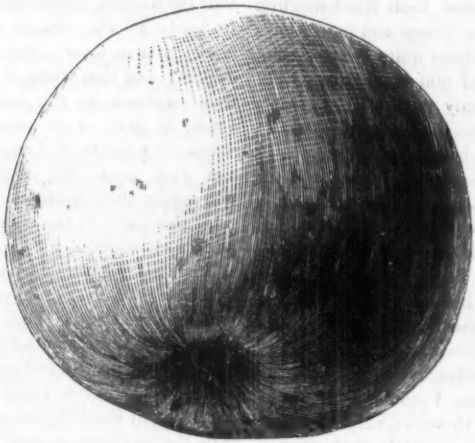

Fig. 1.—*Sheldon Pear.*

N. Y. Fruit Bergamot shaped, skin, a fine russet color. Stalk short and stout, inserted in an uneven cavity. Calyx small, set in a round, narrow basin. Flesh melting,

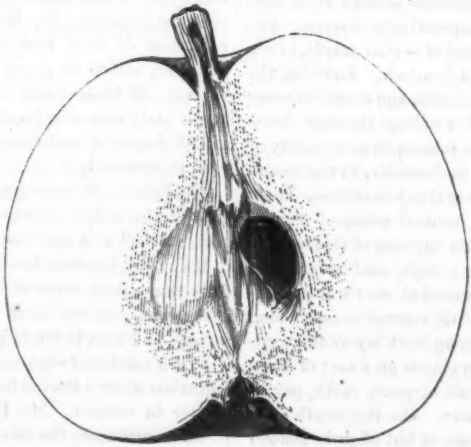

Fig. 2.—*Section.*

juicy, with a very brisk, vinous, highly perfumed flavor. Season, October. This fruit is in high favor among cultivators, and all should add it to their collections as one of the very best.

OCTOBER.

BY WM. BACON, RICHMOND, MASS.

Beautiful October! Month of Golden cornfields, melting fruits and russet forests! Rich charms are thine, though thou closest the season of ingathering of the fruits of the earth, and deckest the fields and the woodlands with vestments of decay, and by the nakedness of thy waning days thou heraldest the sure approach of unrelenting winter. We love thee for the harvest of field and orchard that thou droppest from thy lap. We admire thee for the rich scenery thou spreadest along thy path. Beauty and goodness are sweetly combined in thy attributes. Lessons of instruction are given by thee from thy incoming to thy outgoing. Thou teachest us the ample provisions that nature makes for her own preservation through the season of frosts and storm. The tallest trees at thy bidding lay aside their dense, and in its season cool and refreshing foliage, to give free passage to angry winds as they come down tempestuously to rustle through their branches. Lesser and more delicate plants shrink entirely from the touch of winds and gathering their life-blood into their roots, lie nestling quietly in the earth till the storms have passed away, and the season has returned to awaken them to new life and vigor.

The season of rest to plants is the season of improvement to those who cultivate them. We cannot well, in the season of their growth and vigor, remove them to beautify our grounds or give them a place in our gardens and orchards, to yield us beautiful and health giving fruit. It may be done, we admit, but at a vastly increased amount of labor and risk. And so this season of rest to them is a matter of encouragement and help to all who would cultivate them.

WHEN SHALL TRANSPLANTING BE DONE?

It may be done with good success at any time in the period of the rest of plants. When it can best be done is a matter not yet fully settled, different persons preferring different seasons. Some prefer autumn for setting out, others think spring the most favorable season. I have seen an orchard in full bearing, which was set out in winter. Either of the seasons, autumn or spring, is good. Which is best, depends on circumstances. South, where the seasons are of full length, spring may have superior advantages, but in the north, where spring is so short that we almost step from winter to summer—from snow drifts or mud into harvest fields—when there is much labor that must be done, and but a few days to perform it,—where long pleasant autumns in a measure counterbalance the shortness of spring, and give an opportunity to do much, that might otherwise become the labor of spring, we are fully of the opinion that autumn is the best time for the operation, of hardy trees and shrubs.

In addition to the fact, that autumn is a season of greater leisure from the labors of the field and garden, comes up an additional *why* in the fact, that in many localities the soil is for a much longer period in good workable condition in fall than in spring. It is of little use to set trees or vines in a wet soil, or when the soil is burthened with excessive moisture. Many places have clay in such preponderance that dryness comes late in the spring. When trees are set in such soils, it becomes so compact about their roots that it retards the throwing out of roots, and thereby checks their growth. Indeed, it inflicts a permanent evil upon them, for if it once settles down in brick-like compactness about them, it will remain like brick until it has been pulverized by artificial means. No rains or sunshine, frost or dew will ever decompose it, to make it a suitable lodgement for their roots. Nothing but a thorough overhauling and pulverization will ever make it so. And who would ever think of going through that process after a tree is planted? a process

which, in point of fact, would amount to taking up and replanting.

To counteract this evil then, we, for many localities, prefer fall for transplanting most trees and hardy plants. And the earlier in autumn the work can be done the better, provided the plant has done its work for the season, and ready for the repose that nature provides. As soon as the leaf falls or the stalk decays let the work be done, and well done. The earlier under these circumstances then the better, for the earth is in the best condition for warmth and dryness, and can be placed most naturally around the roots, while at the same time it will assume a more natural and protective position before the setting in of winter. The interstices of the roots will receive it in its mellowness instead of being clogged with mud or left in vacuum through the winter, and the tree, if well planted, will be ready to "go ahead" in the spring with nearly as great facilities as though it had never been removed. And so, October, with its rich harvests, beautiful scenery, cool nights and noontide heats, comes to us inviting earnest and successful labors.

THE ADIRONDAC GRAPE.

BY F. C. BREHM.

In reply to Mr. Bailey's article in September number of Horticulturist, on the Adirondac Grape, and for the benefit of others who desire to know more about this grape, I would submit the following: First, Mr. Bailey claims that my case of reported mildew is the first he ever heard of. To satisfy him that it has mildewed in other places, I will give an extract from a letter I received yesterday from Bridgeport, Connecticut, asking information about the Adirondac, in the following manner: He says, "Do you think the Adirondac is hardy. We bought a number of them, planted one out, it grew two feet the first year, mildewed so badly that it ripened only three inches of wood; this year ripened ten inches of wood, but the leaves are all gone with the mildew, while the Concord, Hartford Prolific, and Rogers' Hybrids are not affected by it; it mildews in the house as well as outdoors." This is from a nurseryman of Bridgeport, Connecticut. If Mr. Bailey will take the trouble to look around a little he can find plenty more such cases. Second, he claims the Adirondac is two weeks earlier than the Delaware. This I claim is not so; as not only did the Adirondac fail to ripen entirely, but Mr. Bailey admitted to me himself, at the State Fair, at Utica, last Fall, Sept. 16th, 1863, that the Adirondac was not quite ripe yet, that he was showing, while I had Delaware grapes on the exhibition tables that were ripe, and grown without any protection whatever in open vineyard, and have at the present time, September 9th, 1864, any quantity of ripe Delaware grapes; also, Israella, Hartford Prolific, and Rogers' 19. Thirdly—As to hardiness, Mr. Bailey is very careful not to say anything about it, except in his advertisements where he cracks it up as being perfectly hardy, extremely early, &c. As to the hardiness of it, I determined to try it and see if it would stand our Winters, accordingly I cut it back to within 18 inches of the old or previous year's growth, where the wood seemed sound and ripe, and left it out along with Delaware, Clinton, Concord, Hartford Prolific, and Rogers' Hybrid, 19. In the Spring following they all started and made a vigorous growth, with the exception of the Adirondac which was frozen to the old wood, and nearly killed. At first I thought it was killed, root and branch, but after a month it pushed two buds which made a feeble growth, and at present appearances will not ripen its wood. These are facts and can be proven, word for word, and if it is not gulling the people, when

men advertise a grape as hardy, healthy, extremely early, and first quality, when it is neither of these; then I would like to know what gulling is?

The Adirondac is, in my opinion, a local grape; it may do well where it originated, but it will not do here, nor will it do for general dissemination, as those will find to their sorrow who are foolish enough to try it; as I said in my first article on the Adirondac and Delaware grapes. I should not have made these statements public but for the persistent efforts to sell the unwary and those not posted, and I considered it my duty to the horticultural community to expose this humbug.

Waterloo, N. Y., Sept. 9, 1864.

THE SEASONS—SEPTEMBER.

BY C. N. B.

Definite are the characteristics of September. There is warmth at mid-day, but cool are the mornings, often chilly; and variable winds, precursors of the equinoctial gales, sweep through the woods with a deep mysterious resonance, like that of the rolling sea. The tall trees bend, and the branches wave to and fro. Clouds gather and disperse, and gather again; and sudden showers accompany rough gusts of wind driving across the Atlantic.

The harvest is over the fields which were lately a waving expanse of grain are now covered only with stubble; the reaper has done his work, and the plowman has begun his labor. And yet, September is not without its pleasant days—it is a refreshing month after the glowing heat of August. It is the month of Pomona rather than Flora; not that there are no flowers, for the garden is gay with the perpetual rose, the phlox, china aster, the fuchsia, the hollyhock, the dahlia, the crysanthemum, the scarlet geranium, and many more which linger long, as loath to yield, till subdued by freezing blasts of winter. The bittersweet, a clinging plant, is still in blossom, while bunches of glossy scarlet berries show that its true flowering time is over, and that these are but a feeble effervescence—a last effort. Red are the leaves of the Virginia creeper, companion of the bittersweet, a graceful tendril-armed plant, winding around and up the trunk of oak or elm. Red also are the honey-suckles, the fragrant bower plants. Yes, September is the season over which Pomona presides. The cider-press is crushing the ripe ruddy apple; and the clustering grapes are ripening.

And now, too, the insect tribes display indications of an altered state of things in their general economy. As the weeks pass by, less and less numerous are the butterflies on the wing; less are the night-flitting moths; caterpillars are seeking nooks and crannies in which to assume their first stage of transformation—the chrysalis formation,—some in silken cocoons awaiting their final change, some naked and suspended; others buried in the earth, or in the centre of time-worn mouldering trees; and not a few in the crevices of the bark, or between the bark and the softening timber. But the bee is still busy. In orchard and garden, the geometric spider, an industrious weaver by night, spreads her nets of radii and excentric circles, with long lines of rigging stretching from tree to tree, or from bush to bush, across our foot-path. We have all heard of the gossamer spider, the aeronautic spider, that on flimsy threads mounts high into the atmosphere, sailing over tree and tower, myriads floating aloft, the prey of the swallow and the martin.

There is a movement among the feathered tribes; there is general preparation among summer visitors for departure, the symptoms of which are more decided as September approaches to October.

The swallows left us in August. The

bobolink is now in haste to follow, and so is the robin.

The bobolink, or reed-bird, as it is called in Pennsylvania, and rice-bird at the South, is one of the choicest delicacies for the table. It is fat in October; small insects and rice are its food.

Hark! The sharp report of the double-barreled rings in our ear. On whirring wings a startled covey of partridges hurry off to a distant spot, the extent of their flight depending upon the more or less perfect moulting of their primary wing-feathers, which is generally completed by the end of October. In August, the sportsman was toiling through the tall weeds and cornfield, bent upon destruction of the wood-cock. He brings with him his keen-scented Spaniel, or high-bred, well-trained pointers, staunch dogs, true to their point —standing steadily.

September and October are the sportsman's months. There is wood-cock shooting in the cornfields; and then too we receive our first of wood-cocks, which resort to brakes of birch and underwood, to thickets bordering the wood, and to jungles overshading oozy ground or miry spots intersected by sluggish creeks, pools or ditches. So September passes into October.

HOW TO MAKE A PARADISE IN THE COUNTRY.

BY THE AUTHOR OF LETTERS FROM UNDER A BRIDGE.

LANDSCAPE-GARDENING is a pleasant subject to expand into an imaginative article, and I am not surprised that men, sitting amid hot editorials in a city (the month of July,) find a certain facility in creating woods and walks, planting hedges and building conservatories. So may the brain be refreshed, I well know, even with the smell of printing ink in the nostrils. But landscape-gardening, as within the reach of the small farmer people, is quite another thing, and to be managed (as brain-gardening need not be, to be sure) with economy and moderation. Tell us in the quarterlies, if you will, what a man may do with a thousand acres and plenty of money; but *we* will endeavor to show what may be done with fifty acres and a spare hour in the evening —by the tasteful farmer, or the tradesman retired on small means. These own their fifty acres (more or less,) up to the sky and down to the bottom of their "diggings," and as nature lets the tree grow and the flower expand for man, without reference to his accounts at the bank, they have it in their power to embellish, and most commonly, they have also the inclination. Beginners, however, at this, as at most other things, are at the mercy of injudicious counsel, and few books can be more expensively misapplied, than the treatises on landscape-gardening.

The most intense and sincere lovers of the country, are citizens who have fled to rural life in middle age, and old travellers who are weary, heart and foot, and long for shelter and rest. Both these classes of men are ornamental in their tastes—the first because the country is his passion, heightened by abstinence; and the latter, because he remembers the secluded and sweet spots he has crossed in travel, and yearns for something that resembles them, of his own. To begin at the beginning, I will suppose such a man as either of these, in search of land to purchase and build upon. His means are moderate.

Leaving the climate and productiveness of soil out of the question, the main things to find united, are, *shade*, *water*, and *inequality of surface*. With these three features given by nature, any spot may be made beautiful, and at very little cost; and, fortunately for purchasers in this country, most land is valued and sold with little or no reference to these or other capabilities for embellishment. Water, in a country so laced with rivers, is easily found. Yet there are hints

worth giving, perhaps, obvious as they may seem, even in the selection of water. A small and rapid river is preferable to a large river or lake. The Hudson, for instance, is too broad to bridge, and beautiful as the sites are upon its banks, the residents have but one egress and one drive—the country behind them. If they could cross to the other side, and radiate in every direction in their evening drives, the villas on that noble river would be trebled in value. One soon tires of riding up and down one bank of a river, and without taste for boating, the beautiful expanse of water soon becomes an irksome barrier. Very much the same remark is true of the borders of lakes, with the additional objection, that there is no variety to the view. A small bright stream, such as hundreds of nameless ones in these beautiful northern states, spanned by bridges, at every half mile, followed always by the roads, which naturally seek the level, and winding into picturesque surprises, appearing and disappearing, continually, is in itself, an ever renewing poem, crowded with changeable pictures, and every day tempting you to follow or trace back its bright current. Small rivers, again, insure to a degree the other two requisites —shade and inequality of surface—the interval being proportionably narrow, and backed by slopes and alluvial soil, usually producing the various nut and maple trees, which, for their fruit and sap, have been spared by the inexorable axes of the first settlers. If there is any land in the country, the price of which is raised from the supposed desirableness of the site, it is upon the lakes and larger rivers, leaving the smaller rivers, fortunately still within the scale of the people's means.

One more word as to the selection of a spot. The rivers in the United States, more than those of older countries, are variable in their quantity of water. The banks of many of the most picturesque, present, at the season of the year when we most wish it otherwise (in the sultry heats of August and September), bared rocks or beds of ooze, while the stream runs sluggishly and uninvitingly between. Those which are fed principally by springs, however, are less liable to the effects of drought than those which are the outlets of large bodies of water; and indeed, there is great difference in rivers in this respect, depending on the degree in which their courses are shaded, and other causes. It will be safest, consequently, to select a site in August, when the water is at the lowest, preferring, of course, a bold and high bank as a protection against freshets and flood-wood. The remotest chance of a war with water, damming against wash and floods, fills an old settler with economic alarm.

It was doubtless a "small chore" for the deluge to heave up a mound or slope a bank, but with one spade at a dollar a day, the moving of earth is a discouraging job, and in selecting a place to live, it is well to be apprized what diggings may become necessary, and how your hay and water, wood, visitors, and lumber generally, are to come and go. A man's first fancy is commonly to build on a hill; but as he lives on, year after year, he would like his house lower and lower, till, if the fairies had done it for him at each succeeding wish, he would trouble them at last to dig his cellar at the bottom. It is hard mounting a hill daily, with tired horses, and it is dangerous driving down with full bellied ones from the stable-door, and your friends deduct from the pleasure of seeing you, the inconvenience of ascending and descending. The view, for which you build high, you soon discover is not daily bread, but an occasional treat, more worth, as well as better liked, for the walk to get it, and (you have selected your site, of course, with a southern exposure) a good stiff hill at your back, nine months in the year, saves several degrees of the thermometer, and sundry chimney-tops, barn roofs, and other furniture, peripatetic in a tempest. Then your hill-road washes with the rains, and needs continual mending, and the dweller on the hill needs one more horse and two more oxen, than the

dweller in the valley. One thing more. There rises a night-mist (never unwholesome from running water), which protects fruit trees from frost to a certain level above the river, at certain critical seasons, and so ends the reasons for building low.

TO BE CONTINUED.

PROPAGATING VINES.

BY J. F. DELIOT, SING SING, N. Y.

Some say the vines raised under glass are not so hardy as those raised out of doors, that is a mistake; some others say they would not plant in the fall, vines raised under glass because they think the winter would kill them, another mistake; here is the reason: The vines raised under glass do not suffer for anything, they have all they need from the beginning to the end, they do not suffer from the drouth, neither from too much water, the growth through the summer season is regular, it must be healthy, they do not feel the first cold night in September, sometimes a little frost to kill their leaves, they grow right along until the wood is perfectly ripe to the top, and the leaves fall by themselves, because they cannot do any more good, the wood, being hard and ripe. If you feel the wood of such vines you will find it very hard. I suppose every one will admit that if the wood is ripe to the top, and being hard, the roots will be ripe to the end, and will be hard too; now if the wood and roots are perfect, how will they freeze in winter? Take the wood of such plants, good plants, mind that, and propagate with it, you will have better plants than if you propagate with wood four times larger grown out doors, and will grow healthier; that proves there is something solid in it.

Now we will see about those raised out doors, or raised under glass and planted out doors in the summer: First, if you plant some vines out doors, raised under glass, they must be good and healthy before taking them out, and if they are planted as early as June, they will make strong plants, they will grow larger plants and larger roots than if they had remained in the green house, but the leaves will fall before the wood and roots be ripe, and they will not be perfect; some time in September the cold night or little frost comes when the vines are in full growth, the vines, three to six feet of wood when the first frost comes, is not more than six inches to two feet ripe wood, some times more, but I have seen many times less, all the rest is green, and will remain green because the frost has killed the leaves. Now everybody will admit with me that, if the wood is not well ripened the roots will not be ripe. Now if the roots and wood are not ripe how can they be hardy? I do not say they are not good plants for that, but I say the plants raised under glass, with good management, are harder and hardier, and will grow better than those grown out doors, and if you take out-door wood to propagate with, few only will grow, and what will grow will not make good plants, because the wood is not perfect. In my opinion, it is safer to plant the vines raised under glass, in the fall, than those grown out doors. In speaking about propagating vines with small wood, that makes me think of some one saying if the vines are not propagated with big, bearing wood, the young plants are worthless, they do not bear fruit, and do not grow so strong, I say, emphatically, that is humbug. I know, by my own experiments, those who write or say such nonsense will only try to make believe they know something. When you buy grape vines look at the roots, if you see them healthy and ripe, do not mind how and what kind of wood they were propagated with.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and publishing departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

One more number, that for December will complete the 19th annual volume of the Horticulturist, and with that will expire the subscriptions of many of our readers. In renewing for the new volume, we hope all will endeavor to obtain for us at least, one new subscriber. New subscribers for 1865 will receive all numbers this year, issued after receipt of the money. The volumes for 1863 and '64 bound in one, and numbers for 1865 at the premium price of Five Dollars, we commend to all new readers; together they contain 1,200 royal octavo pages of reading matter, and nearly 500 original engravings.

We have in type, a little too late for this number, an article on Dutch Bulbs, from the pen of Edward S. Rand, Jr., author of Flowers for Parlor and Garden, and whose article on the Gladiolus in this issue deserves the attention of our readers. Mr. Rand will contribute frequently to our columns during the ensuing year.

Volume 1858 Wanted. If any of our readers can obtain for us a copy of the volume for 1858, and send it to this office, we will send them the Horticulturist for 1865 and 1866, and our thanks. We can supply a few volumes for 1854, 1855, 1856, and 1857, price $2.50 each, bound and post paid. 1859, 1860 and 1861 are nearly all gone.

Mr. C. M. Saxton, well known in this city and throughout the land as the popular publisher of Agricultural and Horticultural books, and for some years publisher of this Magazine, has decided to make his future home in the "glorious west." He leaves us for St. Louis, to become the western agent of Mason & Hamlin's Cabinet Organs, and we congratulate our St. Louis friends on this accession to their enterprising business men, His old love for the Horticulturist still remains as strong as ever, and he will act for us in extending our circulation in the valley of the Mississippi. We commend him to the attention of our readers as a genial hearted gentleman, a popular speaker, and a valued friend.

Preserved Fruits.—We have received from the Oneida Community, Oneida, N. Y., a box of one dozen samples of their preserved fruits, which exceed in beauty and flavor anything we have heretofore seen of this description. The Oneida Community at Oneida, consists of, we believe, about eighty persons, owning in the neighborhood of three hundred acres of land. Their principal pursuit is Horticulture, though they include other branches of industry. Whatever they do, *they do well*, and their reputation is such that the demand from their immediate vicinity, for all articles and products for household use exceeds the supply. We understand, however, that they are constantly increasing their facilities, and intend opening an agency in this city. Let the character of their fruit once become well known here, and it will trouble them exceedingly to keep this market supplied. A really fine and beautiful assortment of fruit put up in the same cleanly, honest manner as that sent us would be in great demand, for New Yorkers *will have* that which is showy, elegant and first class, no matter what the price may be.

Newburgh Bay Horticultural Society.—The fourth annual exhibition of this society opened at Newburgh, September

29th, and continued for three days. This society though young in years has made rapid strides, and now enjoys an enviable reputation for its horticultural displays.

The great feature was as heretofore the native grapes, for which this society has become justly celebrated. We have never seen it surpassed elsewhere. All the old standard varieties were shown, as well as numerous new candidates for public favor. Fine specimens of Isabella, Catawba, Diana, Delaware, Adirondac, Creveling, Allen's Hybrid, Cuyahoga, Rebecca, Herbemont, Hartford Prolific, &c., were upon the tables, which were so completely filled that there seemed no room for another plate. One collection of native grapes contained several plates of fine specimens of Montgomery grape. The judges should have ruled this out, and allowed it to take its proper place among foreign grapes grown in the open air. Foreign grapes were not so well represented as they should have been, though the collections were fine, they were not numerous enough; those of Mr. Green and Mr. Ricketts particularly attracted attention. Apples and pears were shown in large numbers. C. Downing, T. B. Shelton, O. S. Hathaway, W. H. Armstrong, Wm. Johnson, D. A. Morrison, and others, exhibited fine collections. The Sheldon, Dix, Glout Morceau, Beurré, Clairgeau, Seckel, Louise Bonne de Jersey, were large, well grown and exceedingly attractive to the eye.

The display of vegetables was good and well arranged. Carrots, beets, onions, cauliflowers and mammoth egg plants appeared to much advantage.

The flower department deserves more attention than it has received at the hands of the society. Much interest is added to an exhibition by a fine display of flowering plants in pots, as well as cut flowers in profusion, which the residents of Newburgh Bay, have in their power to exhibit. We hope for an improvement in future. Messrs. Brinkerhoff & Co. exhibited a fine collection of plants with ornamental leaves. Begonias, Crotons, Caladiums, Cissus discolor, Pandanus, and others, also Boquet Dahlias. Fine large specimen plants of Heliotrope, Scarlet Geranium and Lantanas perfect in shape, and masses of bloom, deserved and received much praise.

Bouquets of cut flowers were numerous and well arranged. Mrs. Downing's Autumn leaves and ornamental grasses were a feature; the noble plumes of the Pampas grass in the latter gave much grace to the bouquet. Inclement weather for two days prevented many from attending, but we understand that the exhibition was pecuniarly successful.

We annex a list of some of the prizes awarded: For the best basket of fruit to J. H. Ricketts; second to T. H. Roe, third to W. D. Humphries.

For best collection of apples, O. S. Hathaway; second to Wm. Johnson, gardener to H. Ball. Best dish apples, W. H. Armstrong, second, N. D. Brown. Best collection of pears John Peattie, gardener to Mrs. W. Kent; second to Wm. Johnson, gardener to H. Ball; third to H. Cornell.

For best collection of Hardy grapes to A. J. Caywood. For best five varieties Hardy grapes, to Wm. Johnson; second to A. Palmer; third to H. W. Murdfeldt.

For best five varieties Foreign grapes grown under glass, to J. H. Ricketts; second to Thos. Wade, gardener to General Van Allen; third to D. Brinkerhoff & Co.

For best collection of peaches, C. Downing. For best plums, to W. L. Findlay. For best collection of vegetables, Thos. Ayres, gardener to W. L. Findlay.

We have purchased from Mr. C. M. Saxton, a portion of his stock of Agricultural and Horticultural books, and shall hereafter keep for sale at this office, or mail, post paid to any address, on receipt of publishers' prices, all the leading works on Agriculture, Horticulture, Architecture, Landscape Gardening, &c., or obtain and forward in same manner, any publication on other subjects. We have also taken the New York Agency

ot the leading papers and periodicals relating to Agriculture and Horticulture, which we will forward promptly on receipt of sub scription price. Address

GEO. E. & F. W. WOODWARD,
37 Park Row, N. Y.

BIRD HOMES.—The Danish correspondent of the London *Star* says:—

"A pleasing phenomenon, which I had before remarked in every part of the duchies I had hitherto visited, met my eye again on the drive to Christianfeld. On the outside of every cottage or farm-house we passed—even, indeed, on many of the trees by the roadside—hung several little square wooden boxes rather bigger than a London quartern loaf. In the centre was a small round aperture, large enough for any bird, from a wren to a thrush, to go in and out. On inquiry I found that these little contrivances were, what they appeared to be, homes for any little pair of warblers which pleased to build their nest in them. Some years back the farmers were justly punished for the devastation which, under the influence of false ideas, they made among the feathered tribe, by the vast increase of insects which played havoc with their crops. Like sensible men, they were no sooner convinced of their error than they did their best to remedy it. Societies for the preservation of birds were soon formed; the farmers everywhere did their best to forward the objects of the association, and bird murder became a misdemeanor. As the consequence of these measures the country is now plentifully stocked with numerous classes of birds. Flocks of crows, ravens, larks, fieldfares, linnets, and yellow-hammers, as well as other kinds, are to be seen wherever one drives, and appear to have lost much of their natural timidity under the good treatment they have received of late years.

"This is a practice well worthy of adoption in this community. We are losing our native wild songsters. The destructiveness of our boys, aided by the mistaken notion of the farmers that these small birds do more harm than good to our fruit, is fast destroying or banishing them. The introduction of this Danish practice around our country residences would do a great deal to stay the havoc of the destroyer, and retain the sweet music of our spring and summer mornings. A dozen or two of these bird-boxes upon the premises of each country residence would provide morning concerts which would have charmed 'Calypso and her nymphs,' and thus aid to swell the choral music which encircles the world.

"'"'Tis always morning somewhere, and along
The awakening continents, from shore to shore,
Somewhere the birds are singing evermore.'"

NAILS FOR BORERS.—I have a lot of promising young peach trees, and it grieved me much to see the evidences that borers were destroying my hopes. Last spring, about the time the sap commenced circulating, I drove shingle nails into the trees where there were signs of borers, and in a short time it became evident that the trees were relieved from that insiduous and destructive pest. I have applied the same remedy to cherry, plum and apple trees, with similar results; and have repeated the application whenever I have seen new proof of its need. Drive a few shingle nails to the head into parts of trees where borers are at work; and the sap, taking on the oxide of iron, will destroy or expel the enemy. Half a peck or a peck of ashes, according to the size of the tree, is very useful in a ring round the trunk at the roots, for keeping off woodticks and like vermin. In these "latter days," good men and loyal find hosts of rebels in field, garden and orchard; and the only terms these desperate foes offer, is, to gain their independence as invincible destroyers, or be exterminated. By all means give them the latter alternative as soon as possible. Creatures that are "for evil only good" have no rights which any men are bound to respect.—*Cor. N. Y. Observer.*

GINSENG.—This plant, associated with opium and China in the minds of most people, is a native of this country as well as of

Asia. The *Panax quinquefolium*, or ginseng, is an annual plant, the root of which is held in high esteem by the Chinese for its supposed medicinal qualities. Its name, panax, from *panacea*, was given to the genus by Linnæus. In this country, it is found growing in a wild state in Tennessee, Virginia, several of the Western States, and also in Canada. It is collected in large quantities in Ohio, Minnesota and Wisconsin, the roots carefully dried and sent to this city for shipping to China in payment for silks and teas. The dried root is now selling in this market at $1.25 to $1.35 per pound. See what a Dane County (Wisconsin) exchange says of it:—

"'On to Richmond!' may be the watchword along the York and James rivers, but *Ginseng* is the cry in Menomonie and the surrounding neighborhoods. We are told that the speculators are paying 15 cents a pound for it in a green state—it is selling in New York for $1.15, wholesale. Dunn and the surrounding counties are full of the desirable root, and men, women and children are out digging it; and we do not hesitate to say, if 'John Chinaman' does not have a sufficient supply of the 'narcotic' next year, it will not be from a lack of the efforts of the people of this neighborhood to furnish him the material to manufacture it from. We are informed that, in this early part of the season, $8,000 have already been paid out in this county for Ginseng."

Salisbury Cathedral.—This noble edifice—perhaps the most gracefully symmetrical of all the English cathedrals—is in imminent danger of falling. Mr. G. G. Scott, the celebrated architect who has for five years past been engaged in every cathedral restoration in the kingdom, says that there is nothing to prevent the spire falling at any day, like that of Chichester cathedral. Such a calamity has been feared since 1837, and efforts have been made to avert the threatened destruction of the fabric. The tower is held together only by iron bands, and Wren, who examined them in 1688, said that if they were removed the spire would spread open the walls and cause its instant destruction. £40,000 are required to preserve the building, of which £6,000 are subscribed.—*Exchange.*

"I have sometimes thought one good stirring up, whether with the hoe, the rake or the cultivator, was as beneficial as a good shower.

"When vegetables begin to look parched and the ground becomes dry, some gardeners think they must commence the use of the watering-pot. This practice, to a certain extent and under some circumstances, may perhaps be proper, but as a general rule it is incorrect. When watering has once commenced it must be continued, must be followed up, else you have done mischief instead of good: as, after watering a few times, and then omitting it, the ground will bake harder than if nothing had been done to it. Not so with hoeing or raking. The more you stir the ground about vegetables the better they are off; and whenever you stop hoeing, no damage is done, as in watering. Vegetables will improve more rapidly, be more healthy and in better condition at maturity by frequent hoeing than by frequent watering. This result is very easily shown by experiment. Just notice, after a dewy night, the difference between ground lately and often stirred, and that which has lain unmoved for a long time. Or, take two cabbage plants under similar circumstances: water one, and stir the other just as often, stirring the earth about it carefully and thoroughly, and see which will distance the other in growth.

"There are secrets about this stirring of the earth which chemists and horticulturists would do well to study with the utmost scrutiny and care. Soil cultivated in the spring, and then neglected, soon settles together. The surface becomes hard, the particles cohere, they attract little or no moisture, and from such a surface even the rain slides off, apparently doing little good. But let this surface be thoroughly pulveriz-

ed, though it be done merely with an iron rake, and only a few inches in depth, and a new life is infused into it. The surface becomes friable and soft, the moisture of the particles again becomes active, attracting and being attracted, each seeming to be crying to his neighbor, "Hand over, hand over—more drink, more drink." Why this elaboration should grow less and less, till in a comparatively short time it should seem almost to cease, is a question of very difficult solution, though the varying compositions of soils has doubtless something to do with the matter.

"But let the stirring be carefully repeated, and all is life again. Particles attract moisture from the atmosphere, hand it to each other; down it goes to the roots of vegetables; the little suction fibers drink it in; and though we cannot see these busy operations, yet we perceive their healthy effects in the pushing up of vegetables above the surface. The hoe is better than the water-pot. My garden is a signal illustration of the fact."—*Ten acres enough.*

INDIAN CORN FIBRE—A NEW PAPER MATERIAL.—The increasing consumption and advancing prices have been for years admonishing paper-makers and the public of the necessity for new paper material. Many substitutes have been tried. Straw, a cheap material obtainable in unlimited quantities, was made available for coarse papers; but it has only met the demand in a very limited degree. A year ago, or more, some specimens of paper, said to have been made from maize-fibre, were exhibited at the rooms of the Department of Agriculture as the product of an experiment conducted in Austria under imperial patronage. It seems that the experiments have been persevered in and extended. The *National Intelligencer*, says the Hon. Isaac Newton, the commissioner of agriculture, has just received from Austria a package containing the most remarkable results of the manufacture of Indian corn fibre. It embraces paper apparently equal to the finest linen paper, and evidently superior in point of durability. Some of it is thought to be a good substitute for parchment. Specimens of colored paper are remarkable for their evenness and delicacy. Tissue paper, very light and transparent, is included; tracing and drawing papers, preferred by artists to those of English and French manufacture; cigarette papers, black and brown; flower paper, in beautiful colors, for the making of artificial flowers; silk paper of several qualities—in all sixty samples of paper, thick and thin, white and colored, substantially useful and delicately ornamental. They constitute a wonder of ingenuity, and illustrate the power of invention to create new forms from common materials, and the utility of patient effort in developing the perfection of skill in industry. Nor is this all. Bleached and unbleached crash, of several kinds, are exhibited, from the same material, the fibre of of corn husks, or the outer covering of the ear, called in our Southern States *shucks*. But perhaps the most successful result, in heavy fabrics, is oilcloth for floors, of which two different colors are shown, both apparently of superior durability.

The process of paper-making has been for years in development. The spinning and weaving of maize fibre was commenced late in 1862. Both processes have been patented in Austria and other European countries, and in this country. These results have been attained under the direction of Dr. Chevalier Auer de Welsback, director of the imperial printing establishment at Vienna, and superintendent of the imperial paper mills at Schlœgelmuhl, Austria. All portions of the husk are converted into paper-stuff, spinning-stuff, or husk meal, which is mixed with common flour. Nineteen per cent of paper fibre, ten of spinning material, and eleven of feed stuff are obtained, together making forty per cent, leaving a refuse of sixty per cent, much of it fine fibre and gluten, which may yet be filtered and utilized. Nor does the invention, even in its infancy, lack the important element

of profit. An expenditure of 273,740 florins in the manufacture yielded a gross return of 379,000 florins, and a net profit of 105,260 florins, exclusive of rent and use of capital employed. More particular information may be gathered at the Department of Agriculture.

The editor of the *Intelligencer* says he has never seen more beautiful, or firmer, smoother, or tougher paper, of every variety, from the coarsest to the finest, than the specimens referred to above, made of corn shucks; indeed, they excel anything he has ever seen from cotton or linen.—*Louisville Journ.*

Raspberry Food.—Some years since, in the course of correspondence with the lamented Dr. W. D. Brinckle, in regard to raspberry culture, he gave us the following information in regard to the food of that plant. The high reputation of Dr. B. as a pomologist, and his entire and gratifying success in raspberry culture entitle his opinions to great respect. We therefore commend his suggestions to those of our readers engaged in growing the raspberry:

"In my last letter to you, I promised to notice, at a future time, a kind of food to which the raspberry is particularly partial. The food to which I had reference is tan.

"In raising raspberry plants from root cuttings, I usually place about an inch of tan over the pots-herd at the bottom of the pot, which is then filled to within an inch and a half of the surface, with rich mould. In this the rich portion of root is planted, after which the pot is filled up with tan.

"In out-door culture, when the raspberries are planted out, it should be spread over the ground to the depth of two or three inches. The following spring this should be forked in, and another portion applied. But besides affording to the raspberry a kind of nourishment peculiarly adapted to its necessities, tan serves other good purposes of no inconsiderable importance. It keeps the earth about their roots in a moist and loose condition, and in this way greatly promotes the health and vigor of the plants."—*Culturist.*

Rural Art.—The little town of Auteuil, among the environs of Paris, has become world-renowned for the beauty of its architecture, and yet there are not half a dozen expensive buildings in the entire precinct. The beauty of this hamlet has originated from the good taste of the landowners, a majority of whom were far from rich, in consulting upon the propriety of erecting every building, with an eye to the picturesque embellishments of a village. Consequently, even the stables, and the dove-cots and goat-house of Auteuil are built in a manner to delight the traveler's enraptured vision.

Now that the Landscape gardening and cottage architecture are permanent sciences, accessible to the masses, there is no excuse for a cottage builder to deface the general aspect of a town, by the erection of a misplaced or a misbuilt edifice. It will be found in practice that it costs less to put up a handsome building than an uncouth meaningless shingle domicile, while in case of resale, external appearance very often ensures a great bargain. We throw out these hints to those who may be tempted to build in this vicinity, for, as good taste is a corrective of extravagance, and invaluable to the general harmony of a picturesque village, we believe it will prove superior economy in petty freeholders, to cultivate the ornamental as well as the usuful in erecting even a cottage residence.—*Northern Eagle, Pa.*

A Mammoth Building.—Notwithstanding the magnitude of the war and the heavy drain upon the resources of the country, the irrepressible spirit of business enterprise of the universal Yankee nation still marches onward. The Continental Screw Company recently organized in this city have commenced the erection of a building for manufacturing purposes to cost $400,000. It is to be built of stone and brick, three stories high, and covers one whole square in Jersey City, bounded by Washington, Harsimus, Warren and Bay streets, with two main fronts, one on Washington, the other on Harsimus streets, from designs furnished

by Charles Morrill, architect. It will be erected under his superintendence, and while it will contain many new features to expedite business and economize labor, yet great care has been paid to the solidity of the structure. The mason work will be executed by Keeney & Holliday of Jersey City, and the carpenter work by Elisha Sniffen of New York. The building will be furnished with four engines, each of 150 horse-power, built by Hews & Phillips of Newark. This Company was organized to use the machine invented by H. A. Harvey, son of Gen. Harvey, inventor of the machine so long used by the American and Eagle Company of Providence. Charles Bliven of the well-known hardware firm of Bliven & Mead, is President, and the capital is $1,000,000 Edward E. Quimby has been selected as Engineer of the works.

Exhibition of Vegetables and Fruits at Burlington County Fair, N. J.—The exhibition of the present year, which opened at Mount Holly on the 4th instant, was in some respects, considering the difficulties under which the agriculture of the country has labored during the present season, superior to any of its predecessors. The display, possibly, was not as large as in some previous years, but the character of the articles exhibited was unapproachable. In the horticultural department the display was particularly attractive, showing conclusively that not only these plain Quaker farmers, but their wives and daughters as well, blend a discriminating taste and love of the beautiful with their rugged labors. Such pyramids of flowers, such pears, apples and grapes as covered the ample stands, would have tempted the most confirmed dyspeptic. The display of apples by Mr. William Parry, formerly speaker of the New Jersey House of Assembly, attracted especial attention, embracing, like that of Mr. Benjamin Gaskill, a very large number of the best varieties. Much more attention is given in this State of late years to the cultivation of this description of fruit than formerly. The time was when one could travel for scores of miles without meeting a single orchard, but now almost every farm has its orchards of apples and peaches, from which first the cellar of the owner and next the cider press and the city markets are abundantly supplied. Probably none of the many growers of fruit have been more successful than Mr. Parry, though ex-Governor Olden, who has also a sort of horticultural passion, produces grapes and pears on his model farm at Princeton, which ordinarily carry off the palm from all competitors.

In the line of vegetables and grains, the exhibition was also suggestive of a growing agricultural intelligence and ability. One exhibitor entered a quantity of New Brunswick (British) oats, grown on his farm in this county, which weighed forty-three pounds a bushel. Other depositors exhibited sweet potatoes of extraordinary size, and melons in which, if emptied of their contents, the Thumbs, with Commodore Nutt added, might easily find a comfortable habitation. As for the pumpkins, they were simply immense, the smallest hiding under their golden rinds materials for at least fifty Thanksgiving pies. One gentleman exhibited two potatoes raised in one hill, which weighed respectively three and five pounds.

"Ten Acres Enough."—The author of "Ten Acres Enough," Mr. Edmund Morris, resides in this county, where all his farming experiments have been made. His farm is a gem of a place, but he is the last man one would be likely to suspect of engaging in any agricultural enterprise. But a few years since the editor of a leading daily paper in this state, and altogether literary in his tastes, his friends can only with the utmost difficulty persuade themselves that the successes recorded in his book have been really achieved *by him;* and yet such is the undoubted fact. If you should call upon him, he would exhibit with garrulous pride his thrifty acres, dwell upon the merits of Bald Face and Brindle, recount the achievements of his brood of

hens in the production of eggs; and should you chance to "stay to tea," would set before you the very choicest butter, the whitest bread, with cheese and cream, for the like of which afterwards you would barter almost anything—convincing you by his inviting fare, if his little book has failed to do it, that ten acres *are* enough to secure to any industrious, prudent man a life of comfort and content—enough to satisfy all material needs, while continually enriching the mind and heart by the lessons and revelations of seed-time and harvest.—*Cor. N. Y. Eve. Post.*

CATALOGUES, &c., RECEIVED.

Descriptive List of Hardy Native Grape Vines, cultivated and for sale by George W. Campbell, Delaware, Ohio. In addition to a very complete list of out-door grapes, mode and time of planting, quality of vines, &c., Mr. Campbell gives a list of the principal Agricultural and Horticultural periodicals, the terms, and publishers; his doctrine evidently is that as the education of the public progresses in horticultural taste, so will the business of enterprising nurserymen increase, a fact that the past twenty years has successfully demonstrated and that the next twenty will repeat many times. The circulation of horticultural reading matter has had more effect on the enormous increase of the nursery trade than all other mediums put together, and if all nurserymen were as well posted as Mr. Campbell, they would make a strong effort to extend the circulation of all the popular horticultural periodicals of the day.

Catalogue of Green House, Stove, Orchideæ and other plants, Hardy and foreign grape vines, roses, trees, shrubs, &c. John Cadness, Flushing Exotic Gardens, Flushing, N. Y. Mr. C. has a well kept nursery and a fine assortment of all plants advertised, as we know from a personal observation. Much attention is paid to growing foreign vines, for fruiting in pots, and planting in graperies, as well as all the new and old varieties for open air culture.

The Illustrated Annual Register of Rural Affairs, No Eleven, 1865. Published by Luther Tucker & Son, Albany N. Y., will be ready in a few days.

"This Annual has now become one of the standard publications of the day, and the New Number for 1865, for the beauty and profusion of its illustrations, and the interest and value of its contents relating to Country Homes, Country Labors, and Country Luxuries—to all the branches of Agricultural and Horticultural Practice—will be a welcome and important addition in the series." We shall keep a full supply at this office, and mail them to any address, post paid, on receipt of thirty cents; back numbers supplied. Three volumes of Rural Affairs are now published, each containing three volumes of the Annual Register, printed on finer paper, and handsomely bound in cloth. The three volumes contain one thousand pages of reading matter and over thirteen hundred engravings. We mail them, post paid, from this office on receipt of the Publishers' price, separately or together. Price $1,50 each, or $4,50 for the set.

Ritchie's series of Union Portraits. Imperial steel plate engravings from Photographs by Brady, by far the best published, and are executed in the highest style of art, President Lincoln, Gen. Grant, Gen. Hancock, Gen. Sherman, and Admiral Farragut, thus far received. Published by Derby & Miller, No. 5 Spruce street, New York, and sent free by mail or express on receipt of one dollar each. Size for framing 14 x 18 inches

Improved Phrenological Bust, showing the latest classification, and exact location of the organs of the brain, designed for learners. Fowler & Wells, 389 Broadway, New York.

Wholesale Catalogue of fruit and ornamental trees, vines, &c., cultivated and for sale by Edward J. Evans & Co., Central Nurseries, York, Penn.

FULLER'S GRAPE CULTURIST.—The fifth thousand of this admirable work on grape culture is now ready, and meeting with a demand that must be gratifying to the author. Mr. Fuller is a practical grape grower and horticulturist, well versed in every department of successful culture, and ha produced a work that is worthy the attention of all who grow the vine. The instructions are plain and practical and engravings are not spared where necessary. Price $1.50 post paid to any address.

CORRESPONDENCE.

CREVELING GRAPE.—*Messrs. Editors.*—At the Pomological Convention held at Rochester, on 14th September, Mr. Hooker opened the discussion on the Creveling Grape, by stating that it was productive and hardy —an early ripener—hanging well on the bunch, but could not be relied on as a market grape on account of its looseness.

This is so contrary to my experience that I beg leave to call attention to it. Some bunches were exhibited at Rochester that were imperfect, apparently injured in the blossom, perhaps by the ravages of the Rose Bug, *Melolontha Subspinosa*, or perhaps from defective fertilization.

In my own grounds I have had the Creveling Grape fruiting for three successive years, and the bunches are very fine and handsome; so beautiful, indeed, as to elicit the admiration of visitors, who speak of them as perfect specimens, "like the grapes of pictures," the bunch full—shouldered—tapering.

For the first time at Rochester, I heard of the bunch being loose, and confess I was much surprised to see those poor specimens exhibited there.

The explanation of the perfect bunches in my garden is that they were either uninjured by Rose Bugs, or that they were fertilised by other grapes in blossom at the same time.

Having been much annoyed with Rose Bugs in past years, I have succeeded in driving them from my grapes by strewing the vines with sulphate of lime (ground plaster or gypsum) from 7th to 15th of June. This application freely made at the proper time, disperses the bugs, and has relieved my grapes for two seasons, while the roses, plum, cherry, apple and other fruit and forest trees, as well as shrubbery and weeds were literally covered by them The rose bugs eat the grape blossom, and if unmolested, destroy the entire crop. If they can be kept off until the berries are formed, the bunches are generally full and perfect. The Isabella and Catawba bunches are often rendered very loose and imperfect by the rose bug.

Three years ago this pest was so abundant in my garden, that but few if any bunches, among some twenty or thirty varieties, were perfect.

In my endeavors to find and cultivate a first class outdoor grape, I have planted all the varieties that were recommended as worthy of cultivation in this latitude, and up to this time, have found no native black grape that stands higher for quality in all respects than the Creveling.

I am not prepared to say that I may not rate the Adirondac as its equal or even its superior, when I have tested it, time will show

In regard to the fertilization of its blossoms, I may remark that my trellises are occupied by one or more of each variety of grapes under probation, and that my Creveling vines may be easily impregnated with the pollen from the Hartford Prolific Northern Muscadine, Perkins and Clinton, which are in flower on the same day with the Creveling, and that this will account for the bunches being so large and fine with me. It is an interesting experiment, and I suggest to cultivators to dust the Creveling

blossoms with the pollen of other grapes, the coming season.

While Hartfords and Concords bring 20 and 30 cents a pound in New York market, 30 and 40 cents in St. Louis, and 50 cents in Pittsburgh, let us not fear to cultivate the Creveling as a market grape, it is better in quality—ripens as early—and with loose clusters should bring a higher price than either, and will eventually become *the* grape for the masses, whose taste is being rapidly cultivated to distinguish between grapes of a high flavor and delicacy, and those of common quality.

W. A. Woodward.

Vail's Gate, N. Y. October 12th. 1864.

Editors Horticulturist,—I think of building a small greenhouse for the purpose of wintering plants, south of my dwelling-house, facing the sun at 11 o'clock precisely. I intend to have it a lean-to, sixteen feet by ten wide, with a gable fronting the south, and the outside door in the centre of the gable. A nine-inch wall three feet below ground. Put on a sill and carry it up three feet, with three feet rise in the rafters, and the gable some two feet above the roof at the top. In building such a house, how much ventilation will it require? Will two adjoining the building at the top, and one on each side at the bottom, and one over the front door be enough? There will be a door opening out of the cellar, which will be used in cold weather and the other kept closed. My furnace is to be in the cellar, with the flue commencing at the north and running along the east, south and west sides; now, would it answer, for convenience sake, to bring the flue right back inside of the other, and raise it above the furnace, and attach a pipe and carry it twelve feet to a chimney? Which will be the best, wood at three dollars per cord, or coal at eight per ton, north of Lake Ontario, where the thermometer indicates ten to twenty degrees below zero. I intend to build on the fixed principle as far as possible, and tables instead of shelves, one above another, and places for hanging baskets in the gable. Could grape vines be brought into such a house, by providing a place, and bring them in as soon as the frost would admit in the spring? I have vines growing five feet from the front; could they be brought under a board walk, and taken inside and fruited, and others planted and trained for that purpose against the house. Having no experience in these matters, I crave your advice through the Horticulturist, knowing your willingness to help those that want help by pointing out where I would be likely to fail, or any idea you may suggest will be thankfully received: Yours truly,

Coburg, C. W. B. L.

[The ventilation will be ample, we think, It might be well, however, to have a sash in the outside door, made to swing in order to give all the ventilation possible in the spring, before removing the plants out of doors. There would be a difficulty in the draft of a flue built as you propose; better have it direct, with as few turns as possible, and a gradual rise the whole distance from the furnace. It would be better to take it entirely around the house than to return over or alongside the front flue Wood at $3 per cord, if it is dry hickory is undoubtedly cheaper than coal at $8 per ton. Careful experiments have shown that one cord of best dry hickory wood is equal in heating power to one ton of anthracite coal; that is, it will boil as much water and raise as much steam. Wood fires require more attention, however, and for that reason coal is generally preferred. Grape vines could be laid down under the walk, brought through the wall and fruited in the house during the summer, but the results are not as satisfactory as to have a house for the purpose solely. They should be taken into the house, in your climate, not much before the last of April, when the plants will be nearly ready to go out of doors. We think you will not be able to succeed with the vines planted against the back wall, as the heat of your house will cause them to grow during the winter, and the temperature will not be high enough to set and ripen the fruit properly.—Ed.]